



Benchmarking For Strategic Energy Management

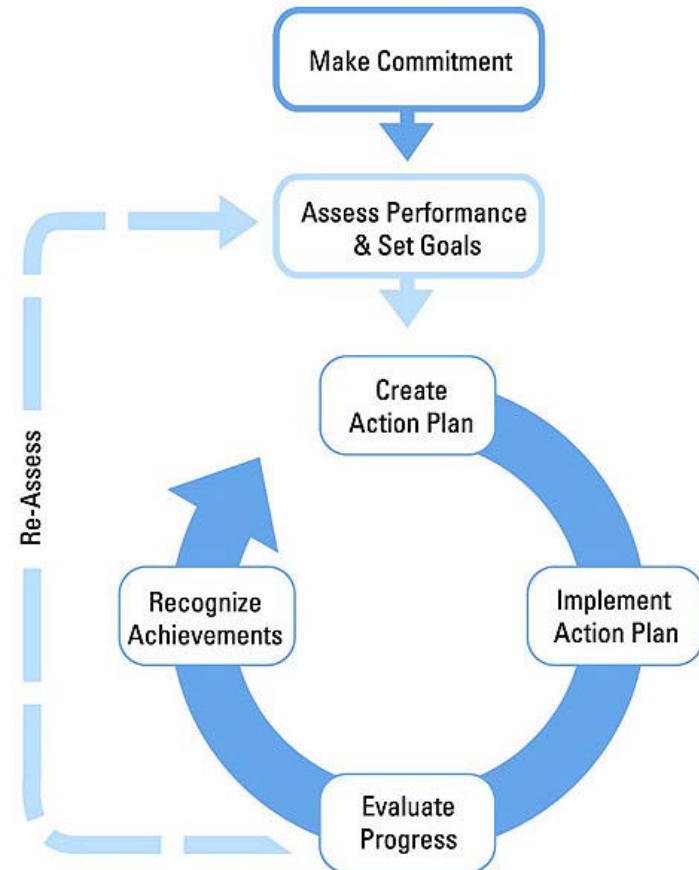
**ENERGY STAR Web Conference
March 16, 2005**

Call-in Number: 1-800-914-3396
Access Code - 9307720

About The Web Conferences



- **Monthly**
- **Topics are structured on a strategic approach to energy management**
- **Help you continually improve energy performance**
- **Opportunity to share ideas with others**
- **Slides are a starting point for discussion**
- **Open & interactive**



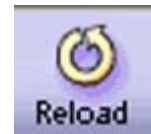
Web Conference Tips



- Mute phone when listening! Improves sound quality for everyone.

Use * 6 – to mute and * 7 to un-mute

- If slides are not advancing, hit reload button or close presentation window and press the launch button again.



Web Conference Tips



- Chat Feature



- Presentation slides will be sent by email to all participants following the web conference.
- Hold & Music – If your phone system has music-on-hold, please don't put the web conference on hold!



Today's Web Conference



- Welcome
- Background
- Richard Beam, System Director,
Energy Management Services, Office
of Supply Chain Management,
Providence Health System
- Questions & Discussion
- Announcements

Why Benchmarking



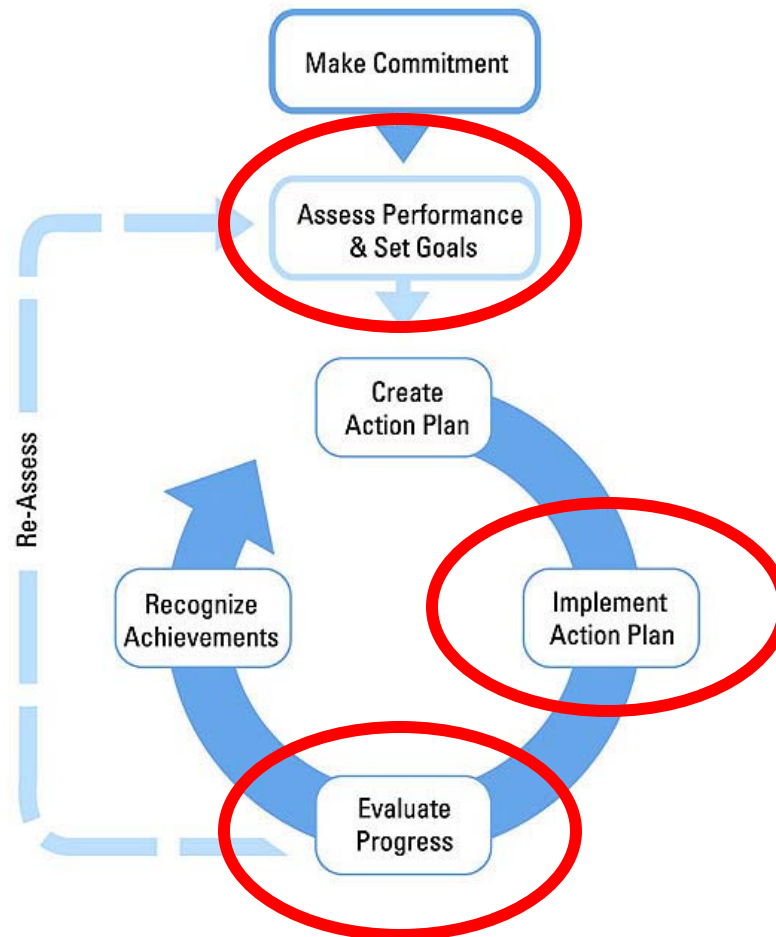
- What you don't measure, doesn't matter
- What you don't measure, you aren't managing
- What isn't benchmarked, doesn't improve



Background



Benchmarking is key to managing energy strategically



Benchmarking Takes Many Forms



- Historical
- Comparative
- Process vs. Facility
- Facility vs. Portfolio
- Performance Based
- Practice Based

But Meaningful Metrics Are Key!

Using Benchmarking Information



- Prioritizing facilities for improvements
- M & V and other evaluation
- Goal setting
- Motivating staff
- Communicating to management
- Communicating to employees, stakeholders, etc

ENERGY STAR Web-Conference

March 16, 2005

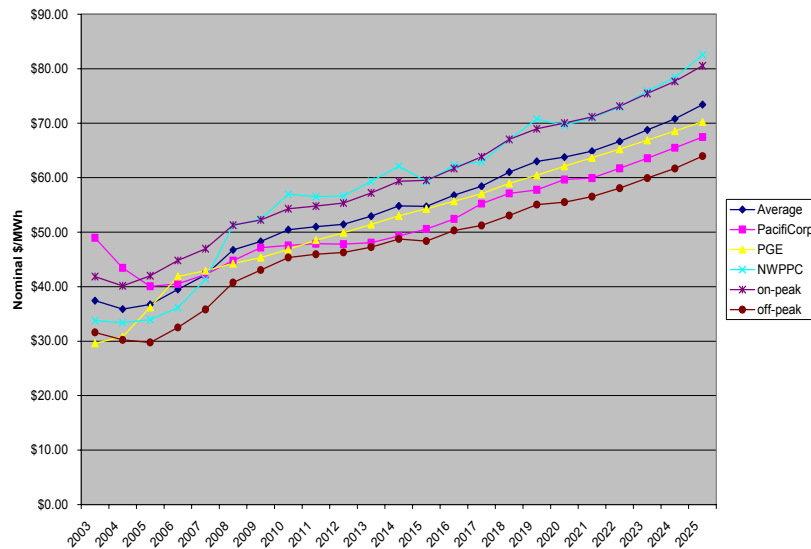
Energy Benchmarking For Strategic Success
By
Richard Beam
System Director, Energy Management Services



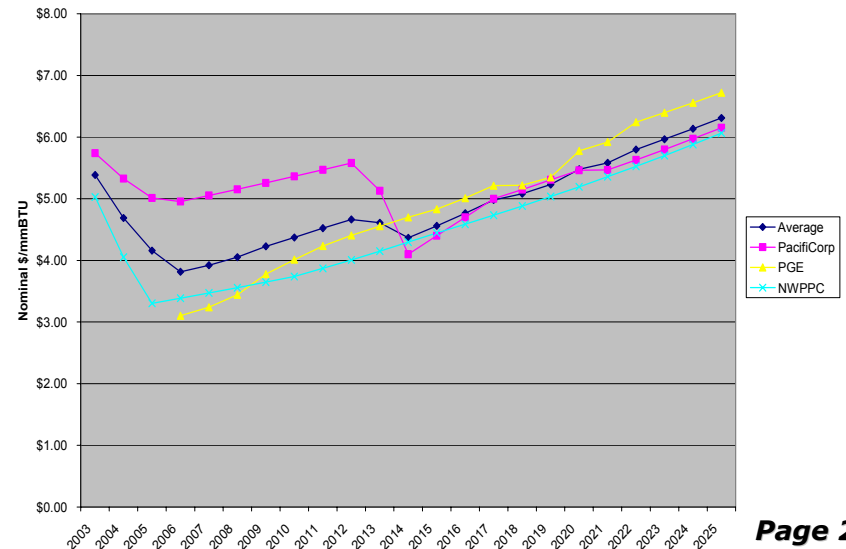
Scope of Energy Costs

- PHS spends \$40M in annual utility costs system-wide.
- Future capital project costs are projected to be \$750 Million over the next five years
 - Resulting growth in utility costs.
 - Resulting growth in facility energy related O&M costs.

Western Electricity Price Forecast



Western Natural Gas Price Forecast



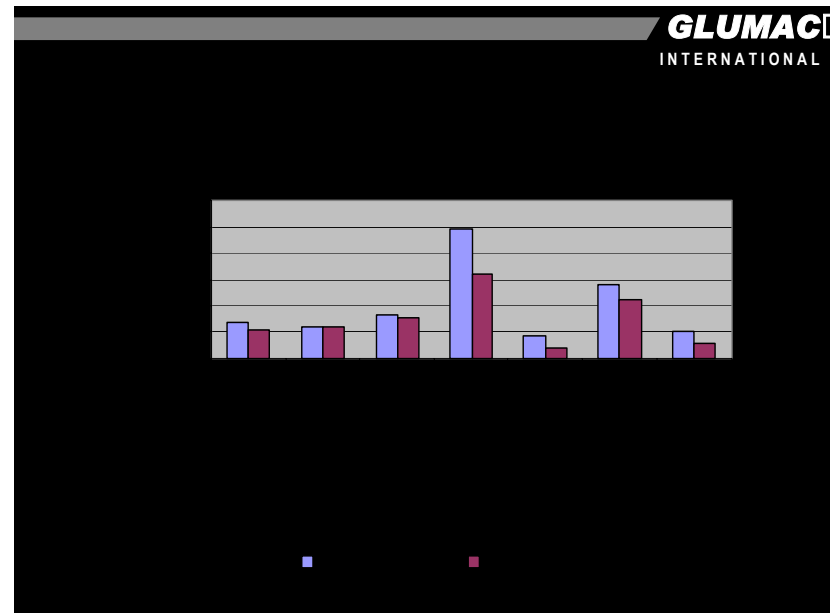
Overview of Energy Management Program

Proactive Leadership

- PHS EMP actively seeks cost reduction measures system-wide.
- National & regional recognition of PHS EMP

Success Stories

- U.S. EPA named PHS an ENERGY STAR Partner of the Year for 2004.
- Richard Beam named 2003 Energy Manager of the Year for the Oregon Association of Professional Energy Managers.
- Success Example: PHS Newberg Energy Management Intervention
 - Designed to Achieve Energy Star Label
 - 26% Reduction in Annual Energy Usage
 - \$178,000 in annual savings
 - \$199,585 in grants
 - \$141,969 in tax credits
 - IRR of 88%



Before & After

Energy Management Vision

“The Preferred Future”

Providence Health System’s energy management vision is to institutionalize energy management in to our Corporate policies and procedures to ensure that energy will be used efficiently throughout its facilities.

“The Overall Purpose of Energy Management”

The purpose of Providence Health System’s energy management activities are to promote and sustain the efficient use of energy in keeping with our Core Values of Stewardship and Excellence.

Energy Management Contributes to Shared Member Needs

- 6% NOI Goal
- Consistent Energy Management Practices & Standards to achieve Operational Excellence
- Stewardship through “Sustainability”
- Capital for High Performance Equipment
- Concerns from PHS Board of Directors re Budget Overruns and Escalating Operating Expenses

Benchmarking Supports Our Energy Management Strategy

- Communicates the Need for Action
- Prioritizes our Opportunities
- Establishes our Goals

ENERGY STAR Benchmarks

FACILITY NAME	GROSS SQ. FT.	KBTU/SF	SCORE
Providence Alaska Medical Center	1,440,606	242.3	46
Providence Centralia Hospital	158,716	270	35
Providence Everett - Pacific Campus	530,678	209.1	53
Providence Everett General Medical Center	355,000	241.9	58
Providence Holy Cross Medical Center	258,598	301.8	30
Providence Hood River Memorial Hospital	94,625	223.6	49
Providence Medford Medical Center	308,000	271	39
Providence Milwaukie Hospital	137,000	211.5	69
Providence Portland Medical Center	908,815	195.5	87
Providence Saint Joseph Medical Center	794,679	212.1	64
Providence Seaside Hospital	102,742	186.7	85
Providence Seward Medical Center	19,550	240.5	N/A
Providence St. Peter Hospital	677,867	208.6	90
Providence St. Vincent Medical Center	1,350,862	235.4	75
Group Total	7,832,923		Page 7

PROVIDENCE HEALTH SYSTEM
EPA ENERGY STAR Certified Hospital Ratings



PRIORITY LIST & GOALS

Cost - Benefit Analysis to Achieve ENERGY STAR Certified Status **Goal of >75 Score**

Facility Name	Score	% Energy Reduction needed to achieve 75	Estimated Annual Savings if Score of 75 Achieved	MAXIMUM Investment@ 20% IRR to Achieve 75
Providence Alaska Medical Center	46	23%	\$ 749,115	\$ 3,745,575
Providence Holy Cross Medical Center	30	33%	\$ 395,160	\$ 1,975,800
Providence St. Joseph Medical Center	64	11%	\$ 214,563	\$ 1,072,815
Providence Medford Medical Center	39	28%	\$ 212,520	\$ 1,062,600
Providence Everett Medical Center - Pacific Campus	53	18%	\$ 172,811	\$ 864,055
Providence Everett General Medical Center	58	15%	\$ 156,200	\$ 781,000
Providence Centralia Hospital	35	30%	\$ 133,321	\$ 666,605
Providence Hood River Memorial Hospital	51	20%	\$ 49,205	\$ 246,025
Providence Seward Medical Center	35	33%	\$ 17,340	\$ 86,700
Providence Milwaukie Hospital	69	6%	\$ 23,290	\$ 116,450
*Providence Little Company of Mary	N/A	N/A	N/A	N/A

Total ENERGY STAR FACILITIES NOT INCLUDED

\$ 2,123,525 \$ 10,617,625

Benchmarking Leads To Action

Regional Retrofit Projects

Project	Annual Energy Cost Savings
1. PEMC – Boilers Retrofits	\$289,161
2. MSV – Laundry Equipment Upgrade	\$ 52,072
3. PSVMC – Controls Retro Commissioning	\$110,000
4. PSVMC – Heat Wheels	\$107,329
5. PSH – Dedicated Surgery HVAC	\$ 22,902
6. Benedictine – Lighting Retrofit	<u>\$ 19,447</u>
	\$600,911

EUI / ECI

Benchmarks Fosters Communication

Facility IQ: Services - Microsoft Internet Explorer provided by Providence Health System

Address: <http://www.facilityiq.net/DefaultServices.asp>

Navigation: About Us | **Services** | Resources | Procurement | Help Desk

Options: Scatter Graph | **Tabular** | Run a New Report

Energy Use/Cost Analysis - Providence Health Oregon

All Fuels (Oregon [PBA - Health Care (inpatient)])
Thursday, January 01, 2004 thru Friday, December 31, 2004 vs. Prior Year

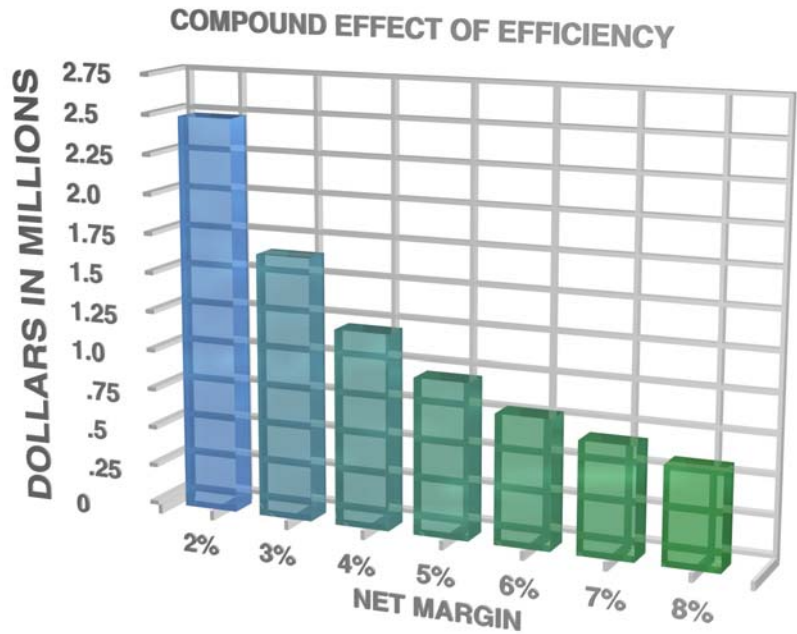
Site Name	Square Feet	Cost/Square Foot			Use/Square Foot		
		Current	Prior	Change	Current	Prior	Change
Ysa - Newberg Hospital	60,000	\$3.143	\$3.162	-0.61%	238.205	239.189	-0.41%
Psa - Milwaukie Hospital	137,000	\$3.086	\$2.593	19.01%	260.365	222.771	16.88%
HR SA - Hood River Memorial Hospital	94,625	\$2.799	\$2.537	10.34%	243.201	223.641	8.75%
SO SA - Medford Medical Center	308,000	\$2.600	\$2.390	8.81%	279.453	266.691	4.79%
Psa - St. Vincent Medical Center	1,350,862	\$2.456	\$2.436	0.84%	236.484	232.374	1.77%
Psa - Columbia Square Phys Therapy	2,569	\$2.387	\$0.513	365.68%	108.059	26.595	306.32%
Psa - Portland Medical Center	908,815	\$2.128	\$2.097	1.47%	206.407	199.343	3.54%
SO SA - Building B	2,202	\$2.000	\$0.857	133.27%	85.127	34.843	144.32%
NC SA - Seaside Hospital	102,742	\$1.927	\$1.854	3.90%	187.277	179.379	4.40%
Psa-Gail Building-Newburg	2,400	\$0.793	\$0.000	N/A	50.642	0.000	N/A
Average:	296,922	\$2.332	\$1.844	26.46%	189.5220	162.4825	16.64%
Total:	2,969,215	\$23.317	\$18.437	26.47%	1,895.2203	1,624.8247	16.64%

Note:
Data Source: NORMALIZED DATA from the DATA WAREHOUSE
- Excludes LATE and MISC Data.

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Consolidated Billing & Resource Accounting systems are patented property of Avista Advantage, PATENT No. 5,943,656 & 5,930,773.

MONITORING & TRACKING PERFORMANCE

- Energy In – Energy Out M&V
 - Measure Energy Inputs with Utilities Meters
 - Instrumentation to Measure Plant Outputs
 - Steam
 - Chilled Water
 - Hot Water
 - Calculate Optimum Efficiency of Plant
 - Set Goals to Operate at Maximum Efficiency
 - ACCOUNTABILITY & STEWARDSHIP



The Value of an Energy Dollar Saved at PHS

Cost Reduction

Aggressively managing energy-related costs lowers Providence’s long-term cost of owning and operating facilities, freeing up capital for other mission-critical activities.

A dollar in energy-related operating costs is directly contributable to margin. With today’s operating margins, it could take up to \$50 in revenue to obtain the same \$1 in margin contribution. The chart above helps highlight this point by showing how much revenue is needed to have the same bottom line impact as \$50,000 in operating cost savings given our different hospital net operating margins.

Financial Benchmark – >20% IRR



Providence Newberg Medical Center Project

		ANNUAL CONSUMPTION								ENERGY AND COST SAVINGS					
		Incremental Cost (1)	Electric		Natural Gas		Total		Electric		Natural Gas		Total		
			KWH	(2) KW	(3) Cost \$	(3) therms	(3) Cost \$	10°Btu	(3) Cost \$	KWH	Cost \$	therms	Cost \$	10°Btu	Cost \$
EEM#	Baseline Building		6,484,864	2,352	466,538	262,241	213,934	48,357	680,472	---	---	---	---	---	
A	Design Dev. Pkg.	\$ 399,415	5,118,560	1,531	355,267	224,603	183,243	39,930	538,510	1,366,304	111,271	37,638	30,691	8,427	\$141,962
B1	N Window SC	\$ -	5,120,033	1,531	355,401	224,316	183,010	39,906	538,411	(1,473)	(134)	287	233	24	\$ 99
B2	Daylighting-Selected	\$ 24,476	5,085,415	1,519	352,782	226,261	184,595	39,983	537,377	33,145	2,485	(1,658)	(1,352)	(53)	\$ 1,133
B3	Occ Sensors-HVAC	\$ 21,598	5,118,661	1,531	355,223	224,142	182,868	39,884	538,091	(101)	44	461	375	46	\$ 419
B4	Condensing Boilers	\$ 132,100	5,118,802	1,531	355,281	185,662	151,490	36,037	506,771	(242)	(14)	38,941	31,753	3,893	\$ 31,739
B5	Static Pressure Reset	\$ 375	5,113,339	1,526	354,764	224,616	183,254	39,913	538,018	5,221	504	(13)	(11)	17	\$ 493
B6	Air Temperature Reset	\$ 375	5,111,083	1,531	355,125	220,935	180,252	39,537	535,377	7,477	142	3,668	2,991	393	\$ 3,133
	Total Incremental Cost	\$ 556,741	5,072,367	1,514	352,089	183,381	149,630	36,001	501,719	1,412,497	114,449	78,860	64,304	12,356	\$178,753
C	ETO Grant Award	\$ (199,585)													
D	BETC Tax Credit	\$ (141,969)													
	TOTAL Net Incremental Cost	\$ 215,187													

Simple Payback = 14 Months

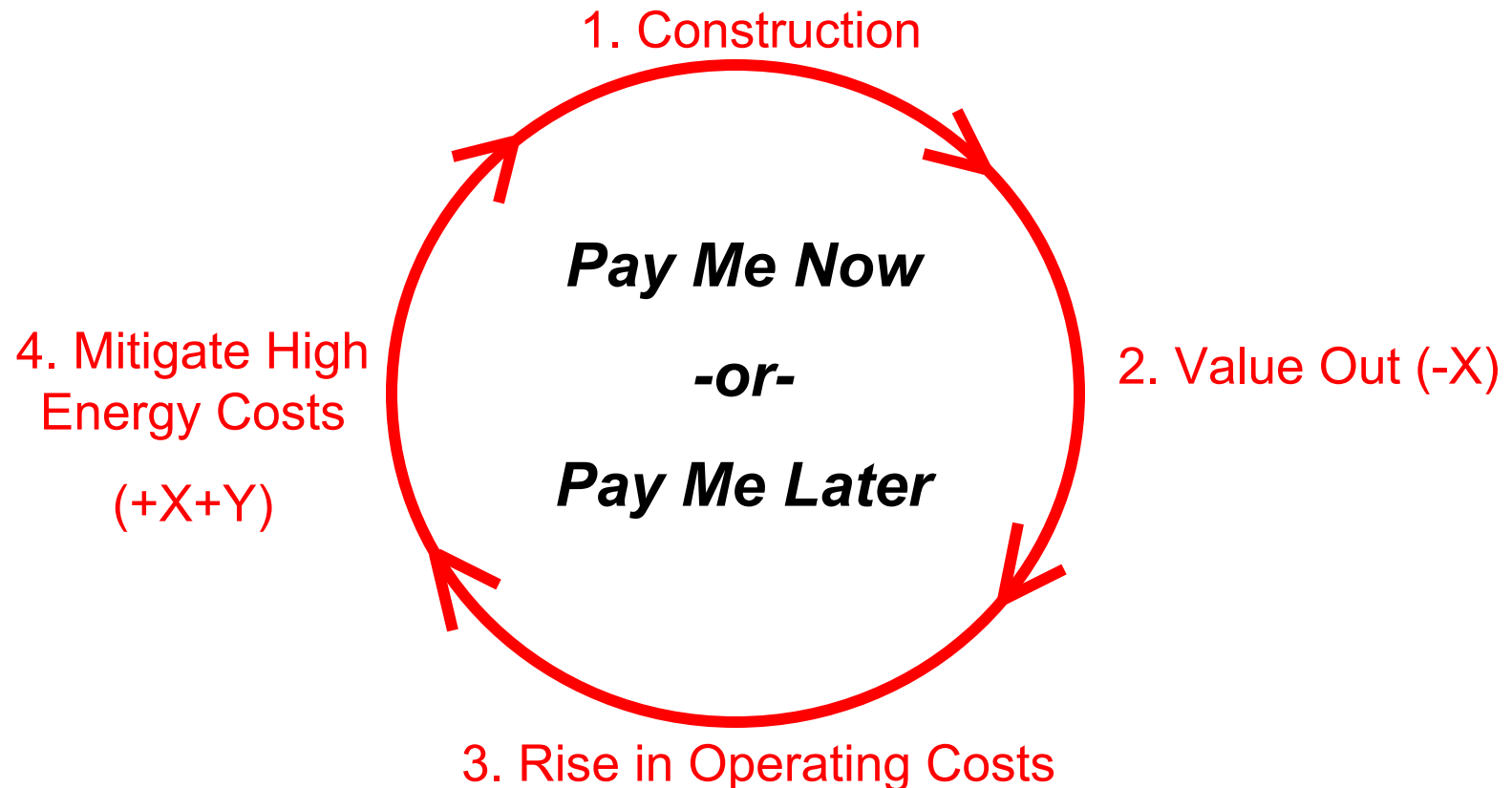
IRR =88% \$ 85,000 additional in "design assistance" provided by others.

State of Oregon Business Energy Tax Credit Analysis (BETC)

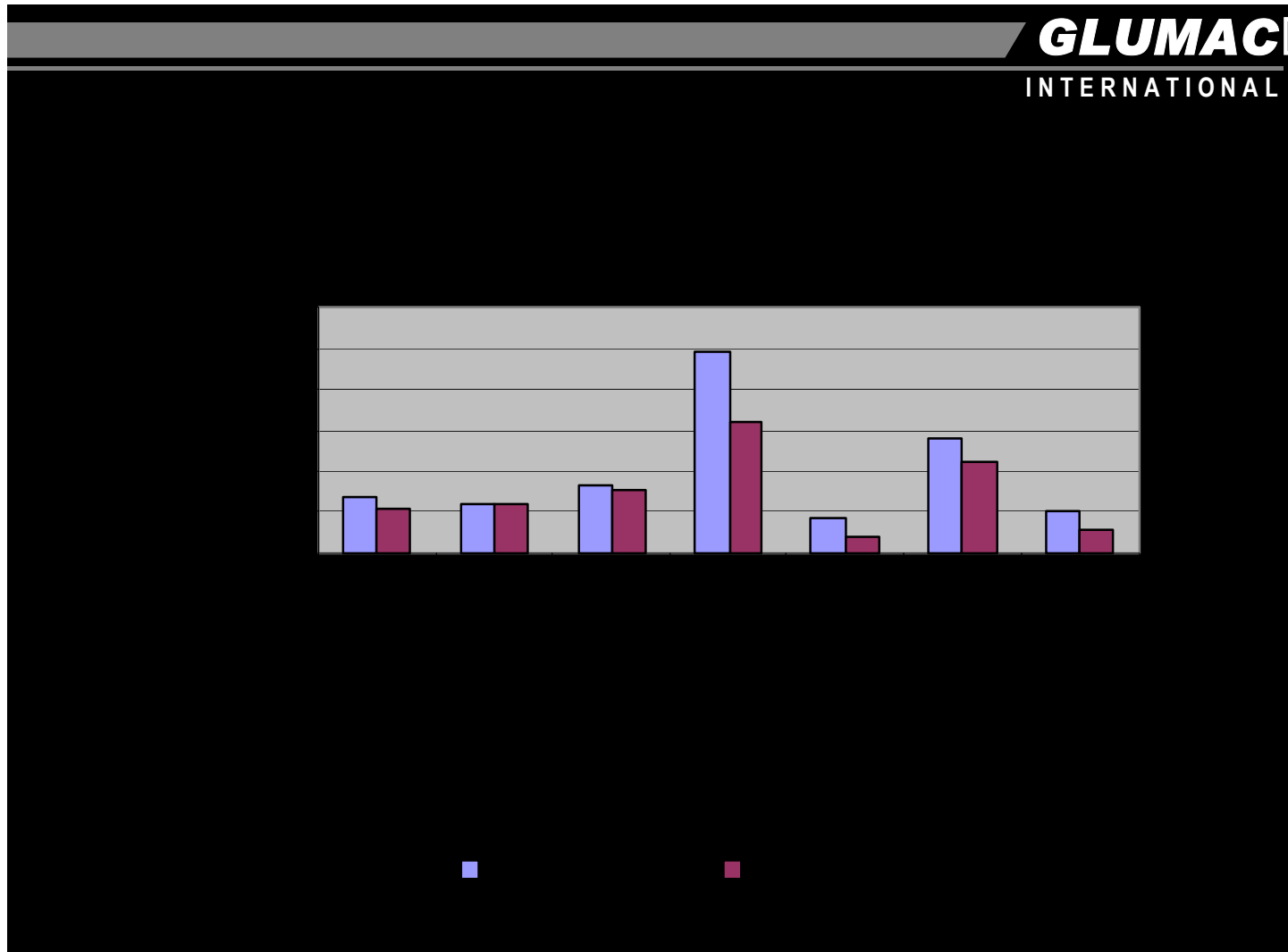
Eligible Cost	\$ 556,741	
35% Tax Credit	\$ 194,859	Tax Credits taken over 5 yrs by "Pass-through Partner(s)"
NPV @ 25.5%	\$ 141,969	

Construction Design Benchmark ENERGY STAR 75

The PHS Energy Management Program is Leading Change by seeking a solution to the **Energy Cost Dilemma - A "Catch 22"**.



ENERGY STAR Certified On Completion



Good Bye From Seattle!

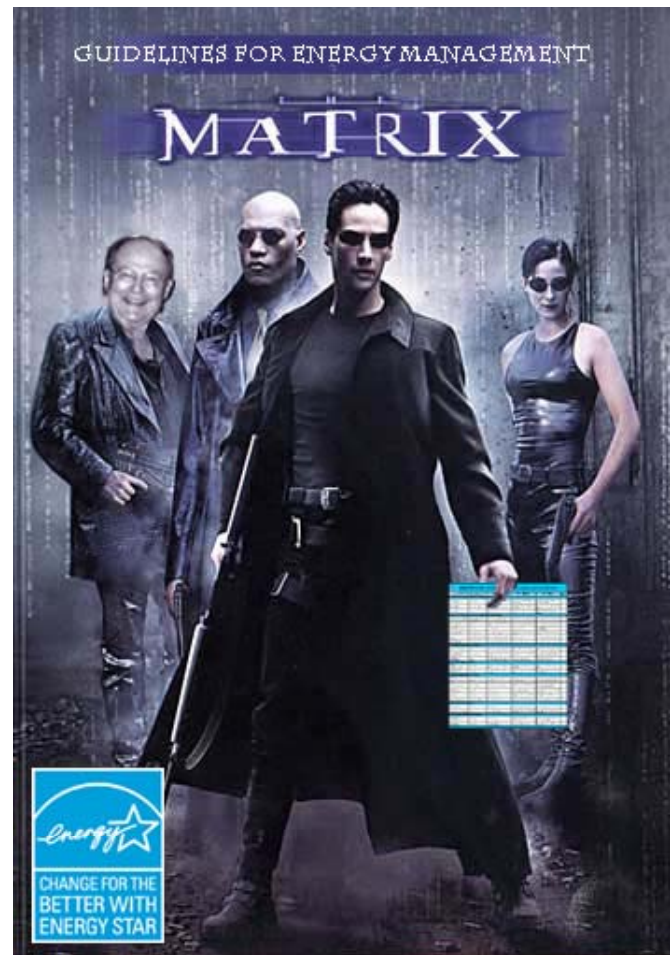


Energy Management Program Assessment Matrix



Energy Management Program Assessment Matrix

The
Matrix



Programmatic Benchmarking



The assessment matrix allows organizations to evaluate their energy programs' strengths, weakness, and identify areas for improvement.

ENERGY STAR® Guidelines for Energy Management Matrix			
	Little or no evidence	Some elements/degree	Fully implemented
Normalize	Not addressed	Some unit measures or weather adjustments	All meaningful adjustments for corporate analysis
Establish baselines	No baselines	Various facility-established	Standardized corporate base year and metric established
Benchmark	Not addressed or only same site historical comparisons	Some internal comparisons among company sites	Regular internal & external comparisons & analyses
Analyze	Not addressed	Some attempt to identify and correct spikes	Profiles identifying trends, peaks, valleys & causes
Technical assessments and audits	Not addressed	Internal facility reviews	Reviews by multi-functional team of professionals
Set Performance Goals			
Determine scope	No quantifiable goals	Short term facility goals or nominal corporate goals	Short & long term facility and corporate goals
Estimate potential for improvement	No process in place	Specific projects based on limited vendor projections	Facility & corporate defined based on experience
Establish goals	Not addressed	Loosely defined or sporadically applied	Specific & quantifiable at various organizational levels
Create Action Plan			
Define technical steps and targets	Not addressed	Facility-level consideration as opportunities occur	Detailed multi-level targets with timelines to close gaps
Determine roles and resources	Not addressed	Informal interested person competes for funding	Internal/external roles defined & funding identified
Implement Action Plan			
Create a communication plan	Not addressed	Tools targeted for some groups used occasionally	All stakeholders are addressed on regular basis
Raise awareness	No overt effort made	Periodic references to energy initiatives	All levels of organization support energy goals

http://www.energystar.gov/index.cfm?c=guidelines.assess_energy_management



Questions & Comments

Upcoming Web Conferences



April 20 – Meet The ENERGY STAR Partners
of the Year

April 18 – Assessing Your Energy
Program* (or Intro To Green Power)

www.energystar.gov/networking



Thank you for participating!